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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/733,876
Filing Date: December 10, 2003
Appellant(s): SHEN ET AL.

Tim R. Wyckoff, Customer No. 22801
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 07/17/2006 appealing from the Office action mailed 10/18/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 5,412,428	Tahara	05-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1,4-19, 21-26, 28-34 are rejected under 35 U.S.C. 102(b) as being anticipated by anticipated by Tahara, US 5,412,428.

Re claim 1, Tahara discloses a method (fig. 19) comprising: receiving a video information stream (i.e. receiving four Y's components) including color information formatted according to a first color space sampling format having a pre-determined number of bits (i.e. Cb5,Cb7 and Cr6,Cr8 color components, which represent a 4:2:2 sampling format with inherently associated pre-determined number of bits, also fig. 9B shows a 4:2:2 sampling format);

splitting the color information into a base information stream formatted according to a second color space sampling format having less than the pre-determined number of bits (i.e. the down-sampler 104 down-samples the 4:2:2 sampling format of the chrominance samples of fig. 9B to a lower resolution/lower pre-determined bits 4:2:0 sampling format chrominance samples of fig. 9C. The 4:2:0 chrominance samples contribute to the "base" information stream of 100) and into an enhanced information stream (i.e. data stream of 101), wherein the enhanced information stream (data stream of 101) is selectively encoded (176, col. 23, line 23-35) using

spatial information obtained from processing of the based information stream or using a previous reference obtained during processing of the enhanced information stream (col. 23, line 23-35, also col. 8, line 54-64 which discloses that the encoder encodes each input picture frame i.e. Y/C components as I picture i.e. spatially encoded or P/B picture i.e. temporally encoded. The select circuit 176 selects either the predictive error from the base data stream of 100 or the predictive error from a previous reference of 101. In data stream of 100, the first picture is intraframe or spatially encoded. Hence, the select circuit 176 would effectively select the intraframe encoded predictive error of 100 in that instant. Subsequent pictures will be temporally encoded as predictive pictures i.e. P/B pictures in both data streams of 100 and 101. The smaller of predictive error of 100 or 101 will be selected for encoding. Hence, this reads on the "either/or" condition of the claim language); and

providing an indicator with at least one of the base information stream and the enhanced information stream that indicates a capability for providing video information according to the first color space sampling format or the second color space sampling format (col. 23, line 50-60).

Re claim 4, the method of claim 1 further comprising encoding the base information stream into a base encoded bit stream, encoding the enhanced information stream into an enhanced encoded bit stream, and combining the base encoded bit stream and the enhanced encoded bit stream into an output bit stream. (col. 23, line 50- 60, also fig. 19: 105).

Re claim 5, the method of claim 4, wherein the output bit stream comprises an interleaved stream of the enhanced encoded bit stream and the base encoded bit stream (col. 23, line 50-60 i.e. multiplexed bit stream).

Re claim 6, the method of claim 4, wherein the output bit stream comprises a concatenated stream of the enhanced encoded bit stream and the base encoded bit stream. (See col. 19, lines 1-15, concatenated stream is examplified).

Re claim 7, the method of claim 6, wherein the enhanced encoded bit stream follows the base encoded bit stream. (See figs. 9A-9C, col. 7, lines 25-31. The encoded bit stream is formatted to have a hierarchical order of resolutions from highest to lowest).

Re claim 8, the method of claim 4, wherein the output bit stream comprises a first file for the enhanced encoded bit stream and a second file for the base encoded bit (See col. 19, lines 1-11, the files are represented by the headers of respective.

Re claim 9, the method of claim 1, wherein the color information includes chrominance blocks. (See figs. 9A-9C).

Re claim 10, the method of claim 1, wherein the first color space sampling format comprises a YUV422 format and the second color space sampling format comprises a YUV420 format. (See figs. 9B & 9C. Note: Cb is U and Cr is V).

Claims 11-18 have been analyzed and rejected w/r to claims 1,4-10 above. In Tahara, the encoding method is microprocessor-based. Hence, having a computer readable medium having computer-executable instructions are inherent and expected.

Claims 19 and 21-25 have been analyzed and rejected w/r to claims 1, 4-10 above.

In Tahara, the encoding system is illustrated in figure 19, inter alia, and serves to encode HDTV signals. HDTV signals inherently come from digital video camera. Claims 26, 28-29 pertain to a decoder corresponding to the inverse operation of the encoder of claims 19-25. Tahara discloses the corresponding decoder in figure 20 (see col. 23, line 61 to col. 24, line 41).

Claims 30-34 have been analyzed and rejected w/r to claims 1, 4-10 and 11-18 above. In Tahara, the encoding system is illustrated in figure 19, inter alia, and it is programmable. It is expected and inherent that the input signal comes from a digital image sensor such as CCD.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara.

Tahara discloses the encoded video bit streams may be transmitted through broadcast radio wave, ISDN, or the like. A set-top box to serve as a device for decoding encoded bit streams is not specifically disclosed in Tahara. Official Notice is taken to note that a set-top box is notoriously well known and used in the art as a digital TV signal decoder, especially for broadcast radio wave digital TV signal. Therefore, it would have been obvious to incorporate a set-top box into Tahara as an alternative decoding device to decode broadcast digital TV signals.

(10) Response to Argument

The appellant argued that Tahara does not disclose or suggest "the enhanced information stream is selectively encoded using spatial information obtained from the processing the base information stream" (claims 1, 11, 19, and 30), or the recitation "the enhanced decoder selectively decodes the enhanced information stream using spatial information obtained from processing of the base information stream" (claim 26), and "using a previous reference obtained

during processing of the enhanced information stream" (claims 1, 11, 19, and 30), or "using a previous reference obtained during processing of the enhanced information stream" (claim 26). In particular, the appellant pointed out the selection (SEL) (176 of fig. 19) in Tahara does not have the same function as claimed, pages 8-12 of the appeal brief.

The examiner respectfully disagrees with the appellant. It is submitted that Tahara discloses the enhanced information stream (Cb5' Cr6', Cb7', and Cr8' of fig. 19, Note a group of signals consisting of the color difference blocks Cb5', Cr6', Cb7', and Cr8', which have higher definition, as considered an enhancement information, than the color difference blocks Cb5", Cr6" output from the circuit 100, as considered base information, are produced) is selectively encoded (SEL, 176 of fig. 19) using spatial information (111 of fig. 19, Note the output from the adder (62 of fig. 19) has already been decoded from frequency domain to spatial domain by the inverse cosine transform (IDCT) (61 of fig. 19)) obtained from the processing the base information stream (100 of fig. 19) OR using a previous reference (174 and 175 of fig. 19, Note the output from the motion compensation is the previous reference, which has already been decoded by the local decoder (IQ and ICD, 171 and 172 of fig. 19) obtained during processing of the enhanced information stream (101 of fig. 19).

Tahara clearly discloses the select circuit (176 of fig. 19) for selecting the predictive picture signals based on the comparison between the predictive error signals resulted when using the predictive picture signals output from the up sampling circuit (111 of fig. 19) and the predictive error signals resulted when using the predictive picture signals output from the motion compensating circuit (175 of fig. 19), when the predictive picture signals corresponding to the smaller predictive error. This means the select circuit (176 of fig. 19) compares the predictive

error signal resulted from the up sampling circuit (111 of fig. 19) with the predictive error signals resulted from the motion compensation (175 of fig. 19) to see which the predictive error signal is smaller.

For explanation, if the predictive error signals resulted from the up sampling circuit (111 of fig. 19) is smaller than the predictive error signal resulted from the motion compensation circuit (175 of fig. 19), the select circuit (176 of fig. 19) selects the predictive picture signals corresponding to the predictive error signals resulted from the up sampling circuit (111 of fig. 19), this means using spatial information obtained from the processing the base information stream (100 of fig. 19).

If the predictive error signals resulted from the motion compensation circuit (175 of fig. 19) is smaller than the predictive error signal resulted from the up sampling circuit (111 of fig. 19), the select circuit (176 of fig. 19) selects the predictive picture signals corresponding to the predictive error signals resulted from the motion compensations circuit (111 of fig. 19), this means using a previous reference obtained during processing of the enhanced information stream (101 of fig. 19).

Tahara further discloses the select circuit (176 of fig. 19) selects any one of the predictive picture signals output from the up sampling circuit (111 of fig. 19) and the predictive picture signals output from the motion compensating circuit (175 of fig. 19), it outputs a space (in the case of selecting the former)/time (in the case of selecting the latter) flag indicating which one of the predictive picture signals is selected (col. 23, lines 50-60) for the enhanced information stream is selectively encoded. This clearly suggests that the enhance encoder (101 of fig. 19) for the enhanced information stream is selectively encoded using spatial information (111 of fig. 19)

obtained from the processing the base information stream (100 of fig. 19) or using a previous reference (175 of fig. 19) obtained during processing of the enhanced information stream (101 of fig. 19).

Moreover, Tahara discloses the enhanced decoder (162 of fig. 20) selectively decodes the enhanced information stream (150 of fig. 20, Note the output from the separating circuit) using spatial information (151 of fig. 20, Note the output signal from the base has already been decoded into a spatial information) obtained from processing of the base information stream (161 of fig. 20), wherein upon the space flag being detected, the select circuit (183 of fig. 20) selects the predictive error signals output from the up sampling circuit (151 of fig. 20) and, upon the time flag being detected, the select circuit (183 of fig. 20) selects the predictive error signals output from the motion compensating circuit (182 of fig. 20), followed by outputting to the calculator (155 of fig. 20) for the enhancement decoder (162 of fig. 20). In view of the discussion above, Tahara clearly anticipates the claimed features.

The appellant particularly argued that in Tahara the smaller predictive error signals are chosen based on the comparison, page 11 of the appeal brief.

The examiner respectfully disagrees with the appellant. It is submitted that the select circuit (176 of fig. 19) selects the predictive picture signals corresponding to the smaller predictive error signals based on the comparison (col. 23, lines 28-29). Tahara does not disclose "the smaller predictive error signals are chosen based on the comparison". Therefore, the argument is not persuasive.

The appellant further argued that there must be suggestion to combine reference teachings, a reasonable expectation of success, and the prior art must teach or suggest all the claim limitations, pages 12 and 13 of the appeal brief.

The examiner respectfully disagrees with appellant. It is submitted that Tahara discloses the encoded video bit streams may be transmitted through broadcast radio wave, ISDN, or the like and numerous changes and modifications may be made by those skilled in the art (col. 25, lines 50-67). Tahara does not teach a set-top-box serves as a device for decoding the encoded TV signal. However, it is well known in the art that a set-top-box as a digital TV signal decoder, especially for broadcast radio wave digital TV signal. Therefore, it would have been obvious to one of ordinary skill in the art to modify any suitable and conventional set-top-box into the suggested numerous changes and modifications of Tahara for receiving and decoding a broadcast video signal such as an NTSC, PAL, SECAM or other TV system video signal, and providing video data to the television set via video link to Internet so that the user can access various Internet system network services, browse the Web, send e-mail, and otherwise access the Internet. (See US Patent 6,400,407 for support) In view of discussion above, the claimed features are unpatentable over the combination of the well-known feature with Tahara.

The appellant further pointed out that without repeating the arguments discussed above, the Appellant maintains that the Tahara reference does not teach or suggest a decoder that "selectively decodes the enhanced information stream using spatial information obtained from processing of the base information stream or using a previous reference obtained during processing of the enhanced information stream" as recited in claim 26. Claim 29 is dependent on claim 26 and is at least allowable as a result of this dependency, page 13 of the appeal brief.

The examiner respectfully disagrees with that applicant. It is submitted that a decoder (fig. 20, Note enhancement decoder (163 of fig. 20)) selectively decodes the enhanced information stream using spatial information (151 and 183 of fig. 20, Note the select circuit (183) selects the predictive error signals from the output of the un sampling circuit (151 of fig. 20), where the predictive error signals have already decoded into a spatial information) obtained from processing of the base information stream (161 of fig. 2) or using a previous reference (182 of fig. 20, Note the predictive error signals from the motion compensation circuit (281 of fig. 20)) obtained during processing of the enhanced information stream (162 of fig. 20). In view of the discussion above, Tahara clearly anticipates the claimed features.

(11) Evidence Appendix

None of evidence appendix is submitted.

(12) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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